

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 14, 2025

TO: Technical Director
FROM: Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending March 14, 2025

Alternate Methodology: Last month, NNSA approved an alternate methodology for developing safety bases for nuclear explosive operations at Pantex on a trial basis, permitting implementation on one safety basis document. The previous Pantex contractor created this alternate methodology to serve as a replacement for DOE Standard 3009 and certain aspects of DOE Standard 3016 (see 9/30/2022 and 4/14/2023 reports). This effort was part of a larger, site-specific safety basis re-design project intended to simplify the development and maintenance of Pantex safety bases. Throughout this process, NNSA and Pantex contractor personnel have held frequent meetings with members of the Board's staff and the resident inspectors to discuss revisions to the proposed alternate methodology and solicit feedback. The Board's staff plans to review the approved methodology and its eventual implementation.

Unplanned Power Outage: Last week, PXD reported an unexpected loss of power in multiple nuclear explosive bays. PXD electricians determined that the power loss was caused by a ground fault in one of the substation electrical bus ducts that supplies power to the affected facilities. During subsequent inspections, PXD electricians confirmed the ground fault in one of the bus ducts and discovered that another bus duct had previously been placed out of service, i.e., air-gapped, due to similar degradation (see 3/7/2025 report). This week, the resident inspectors attended the PXD event investigation. PXD infrastructure personnel discussed efforts to re-establish power to the affected facilities via temporary means and plan permanent repairs.

Nuclear Explosive Operations: This week, PXD production technicians paused assembly operations in a nuclear explosive bay after receiving an out-of-tolerance result from an electrical test. After making notifications and placing the unit in a safe and stable configuration, the technicians exited the facility. PXD is awaiting direction from the relevant design agencies prior to resuming operations on the unit.

Also, this week, PXD quality assurance inspection technicians identified a discrepancy with component markings during certain assembly operations. During an inspection hold point prescribed by the nuclear explosive engineering procedure, these technicians noticed that the quality stamp on a component indicated the component status was *acceptance required* rather than *mark quality* status, which is required for component use in nuclear explosives. PXD determined that the component had been removed from a unit and stamped *acceptance required* during previous disassembly operations and then reinstalled into this subsequent unit. After pausing operations and entering the component into the nonconformance database, PXD personnel reviewed associated records and confirmed the *mark quality* status of the component, indicating that it should have never been stamped *acceptance required*. PXD is currently determining the exact component stamping timeframes, as well as the reason for application of the incorrect stamp and the insufficient quality verifications, which could have caught the discrepancy, prior to part assembly into the unit. PXD plans to conduct an event investigation next week.